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PATENT DEPARTMENT
MACROVISION CORPORATION
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EXAMINER

GANDHI, DIPAKKUMAR B

ART UNIT PAPER NUMBER

2133

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/993,916

Applicant(s)

SOLLISH ET AL.

Examiner

Dipakkumar Gandhi

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-65 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,311,305 B1 in view of Kim (US 6,694,023 B1).

U.S. Patent No. 6,311,305 B1 in claim 1 teaches a method for overriding error correction (i.e. disabling error correction) on a digital optical medium (i.e. a DVD disc), the method comprising the steps of: prior to EFM encoding, determining the error-correction code codeword, in which a non-correctable predetermined symbol is to be contained and causing a non-correctable pattern of erroneous symbols to occur in the error-correction code codeword and following EFM encoding, storing the predetermined symbol and said pattern of erroneous symbols on the digital optical medium (i.e. producing a signature on a DVD disc comprising introducing at least one ambiguous symbol into an ECC block during EFM encoding).

However U.S. Patent No. 6,311,305 B1 does not teach EFM+ encoding in claim 1.

Kim in an analogous art teaches that the EFM+ modulation is modified from EFM modulation data that is used for recording data on a compact disk (CD), in order to be appropriate for recording data on a read-only DVD (DVD-ROM), (col. 3, lines 63-66, Kim).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify U.S. Patent No. 6,311,305 B1 with the teachings of Kim by including an additional step of using EFM+ encoding.

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This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using EFM+ encoding would provide the opportunity to record data on a DVD.

Drawings

3. The drawings are objected to because figure 6 is very dark. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 58 is objected to because of the following informalities: page 48, claim 58, line 1, "validatable" is incorrect. It should be --valid--. Appropriate correction is required.
5. Claim 59 is objected to because of the following informalities: page 48, claim 59, line 1, "validatable" is incorrect. It should be --valid--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

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7. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 12, processed sector and unprocessed sector are not defined and after comparison, the next step is not mentioned.

8. Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 14, processed sector and unprocessed sector are not defined and after comparison, the next step is not mentioned.

9. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 15, after comparison, the next step is not mentioned.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

11. Claim 16 is rejected under 35 U.S.C. 102(e) as being anticipated by Ueda et al. (US 6,289,102 B1).

Ueda et al. anticipate claim 16.

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Ueda et al. teach a method for producing a signature on a digital optical disc (DVD) comprising: altering at least one component in the lead-in zone of the DVD (col. 1, lines 43-46, col. 3, lines 45-50, Ueda et al.).

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 39-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Isozaki (US 5,198,813).

- Isozaki anticipates claim 39.

Isozaki teaches a table for converting 8-bit coded data into 16-bit code words, comprising: at least one 16-bit code word generally capable of being read in one of at least two possible ways (figure 1, 2, col. 10, lines 55-60, col. 12, lines 20-30, col. 14, lines 40-45, col. 16, line 62 to col. 17, line 29, Isozaki).

- Isozaki anticipates claim 40.

Isozaki teaches a table, wherein said at least one 16-bit code word comprises: at least one transition, said at least one transition being shifted between a pair of encodings differing by one transition position (figure 1, 2, col. 12, lines 20-30, col. 16, line 62 to col. 17, line 29, Isozaki).

- Isozaki anticipates claim 41.

Isozaki teaches the table further comprising: a plurality of states, each of said plurality of states having at least one 16-bit code word capable of being read in one of two possible ways (figure 1, col. 12, lines 11-30, Isozaki).

- Isozaki anticipates claim 42.

Isozaki teaches a table for use with an EFM+ encoder comprising: means for converting 8-bit coded data into 16-bit code words, at least one 16-bit code word generally capable of being read in one of at least two possible ways (figure 1, 2, col. 12, lines 20-30, col. 13, lines 28-33, col. 14, lines 17-19, lines 40-45, Isozaki).

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- Isozaki anticipates claim 43.

Isozaki teaches the table, wherein said at least one 16-bit code word comprises: at least one transition, and means for shifting said at least one transition between a pair of encodings differing by one transition position (figure 1, 2, col. 12, lines 11-13, lines 20-30, col. 13, lines 14-20, col. 14, lines 40-45, Isozaki).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

16. Claims 1, 54, 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (US 6,539,475 B1) in view of Williams et al. (US 2001/0042230 A1) and Oshima et al. (US 6,266,299 B1).

As per claim 1, Cox et al. teach a method for producing a signature on a DVD disc (col. 1, lines 25-26, col. 5, lines 2-3, Cox et al.) comprising introducing at least one ambiguous symbol into a block (figure 1a, col. 2, lines 18-20, lines 52-55, col. 3, lines 12-15, Cox et al.).

However Cox et al. do not explicitly teach the specific use of partially disabling error correction.

Williams et al. in an analogous art teach that the ECC Engine 213 previously disabled error correction in response to the command of the indicating operation 502 (block 502 in figure 5, page 4, paragraph 43, Williams et al.).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cox et al.'s patent with the teachings of Williams et al. by including an additional step of partially disabling error correction.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that partially disabling error correction would provide the opportunity to increase the time to read the sectors on the DVD during the signature validation.

Cox et al. also do not explicitly teach the specific use of EFM+ encoding and ECC.

Oshima et al. in an analogous art teach that since the control data is main information, it is recorded by EFM, 8-15, or 8-16 modulation (col. 31, lines 41-42, Oshima et al.). Oshima et al. also teach that FIG. 21 (a) is a diagram illustrating the data structure after ECC encoding ... present invention (figure 21a, 21b, 21c, col. 13, lines 60-65, Oshima et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cox et al.'s patent with the teachings of Oshima et al. by including an additional step of using EFM+ encoding and ECC.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using EFM+ encoding and ECC would provide the opportunity for uniquely describing any combination of eight real data bits by a pattern of 16 channel bits and error correction of data bits read from the disc.

- As per claim 54, Cox et al., Williams et al. and Oshima et al. teach the additional limitations.

Cox et al. teach a DVD disc comprising: a signature (col. 1, lines 25-26, col. 5, lines 2-3, Cox et al.), said signature having at least one ambiguity resulting from at least one ambiguous symbol inserted into a block (figure 1a, col. 2, lines 18-20, lines 52-55, col. 3, lines 12-15, Cox et al.).

Williams et al. teach partially disabled error correction (block 502 in figure 5, page 4, paragraph 43, Williams et al.).

Oshima et al. teach EFM+ encoding and ECC (figure 21a, 21b, 21c, col. 13, lines 60-65, Oshima et al.).

- As per claim 60, Cox et al., Williams et al. and Oshima et al. teach the additional limitations.

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Cox et al. teach a DVD disc comprising: means for producing a signature on a DVD disc (figure 1a, col. 1, lines 25-26, col. 3, lines 12-15, col. 5, lines 2-3, Cox et al.), said signature comprising: means for introducing at least one ambiguous symbol into a block (figure 1a, col. 2, lines 18-20, lines 52-55, col. 3, lines 12-15, Cox et al.).

Williams et al. teach means for partially disabling error correction (block 502 in figure 5, page 4, paragraph 43, Williams et al.).

Oshima et al. teach EFM+ encoding and ECC (figure 21a, 21b, 21c, col. 13, lines 60-65, Oshima et al.).

17. Claims 2-11, 55, 56, 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (US 6,539,475 B1), Williams et al. (US 2001/0042230 A1) and Oshima et al. (US 6,266,299 B1) as applied to claim 1 and 54 above, and further in view of Demura et al. (US 6,357,030 B1).

As per claim 2, Cox et al., Williams et al. and Oshima et al. substantially teach the claimed invention described in claim 1 (as rejected above).

However Cox et al., Williams et al. and Oshima et al. do not explicitly teach the specific use of the method wherein introducing at least one ambiguous symbol comprises: selecting at least one byte in at least one column of the ECC

Block.

Demura et al. in an analogous art teach that a byte column (a column of 192 bytes formed by taking one byte from each of 192 rows) is read from the source data of the ECC block F1 (fig. 7, col. 5, lines 3-5, Demura et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cox et al.'s patent with the teachings of Demura et al. by including an additional step of using the method wherein introducing at least one ambiguous symbol comprises: selecting at least one byte in at least one column of the ECC Block.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that selecting at least one byte in at least one column of the ECC Block would provide the opportunity to modify the data stored in the ECC block.

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- As per claim 3, Cox et al., Williams et al., Oshima et al. and Demura et al. teach the additional limitations.

Demura et al. teach introducing at least one ambiguous symbol further comprises: encoding at least one data symbol in said column by the corresponding ambiguous representation of said at least one data symbol (figure 7, col. 5, lines 18-24, Demura et al.).

- As per claim 4, Cox et al., Williams et al., Oshima et al. and Demura et al. teach the additional limitations.

Demura et al. teach the method, wherein partially disabling error correction comprises: invalidating at least one outer parity symbol (PO) of the 16 PO bytes corresponding to the at least one column; and invalidating at least one inner parity symbol (PI) of the 10 PI bytes corresponding to each row containing one of the invalidated outer parity symbols (figure 7, col. 7, lines 37-53, Demura et al.).

- As per claim 5, Cox et al., Williams et al., Oshima et al. and Demura et al. teach the additional limitations.

Demura et al. teach the method, wherein invalidating comprises: invalidating the bits in said at least one outer parity symbol (PO) and said at least one inner parity symbol (PI), (figure 7, col. 3, lines 15-39, Demura et al.).

- As per claim 6, Cox et al., Williams et al., Oshima et al. and Demura et al. teach the additional limitations.

Demura et al. teach the method, wherein partially disabling error correction comprises: invalidating at least eight outer parity symbols (PO) of the 16 PO bytes corresponding to the at least one column (figure 7, col. 7, lines 37-53, Demura et al.).

- As per claim 7, Cox et al., Williams et al., Oshima et al. and Demura et al. teach the additional limitations.

Demura et al. teach the method, wherein partially disabling error correction further comprises: invalidating at least five inner parity symbols (PI) of the 10 PI bytes corresponding to each row containing one of the invalidated outer parity symbols (figure 1, 3, 7, col. 1, lines 41-54, col. 4, lines 65-67, col. 7, lines 37-53, Demura et al.).

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- As per claim 8, Cox et al., Williams et al., Oshima et al. and Demura et al. teach the additional limitations.

Demura et al. teach the method, wherein invalidating comprises: invalidating the bits in at least one of the at least eight outer parity symbols (PO), (figure 7, col. 7, lines 37-53, Demura et al.).

- As per claim 9, Cox et al., Williams et al., Oshima et al. and Demura et al. teach the additional limitations.

Demura et al. teach the method, wherein invalidating comprises: invalidating the bits in at least one of the at least five inner parity symbols (PI), (figure 1, 3, 7, col. 1, lines 45-54, col. 4, lines 65-67, col. 7, lines 37-53, Demura et al.).

- As per claim 10, Cox et al., Williams et al., Oshima et al. and Demura et al. teach the additional limitations.

Demura et al. teach the method, wherein invalidating comprises: substituting at least one of the at least eight outer parity symbols (PO) with a different symbol (figure 7, col. 7, lines 37-53, Demura et al.).

- As per claim 11, Cox et al., Williams et al., Oshima et al. and Demura et al. teach the additional limitations.

Demura et al. teach the method, wherein invalidating comprises: substituting the bits in at least one of the at least five inner parity symbols (PI) with a different symbol (figure 1, 3, 7, col. 1, lines 45-54, col. 4, lines 65-67, col. 7, lines 37-53, Demura et al.).

- As per claim 55, Cox et al., Williams et al., Oshima et al. and Demura et al. teach the additional limitations.

Demura et al. teach that at least one ambiguous symbol comprises: at least one encoded data symbol in at least one byte in at least one column of the ECC block, said at least one encoded data symbol being the corresponding ambiguous representation of said at least one data symbol (fig. 7, col. 5, lines 3-5, lines 18-24, Demura et al.).

- As per claim 56, Cox et al., Williams et al., Oshima et al. and Demura et al. teach the additional limitations.

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Demura et al. teach at least one invalid outer parity symbol (PO); and at least one invalid inner parity symbol (PI), (figure 7, col. 7, lines 37-53, Demura et al.).

- As per claim 57, Cox et al., Williams et al., Oshima et al. and Demura et al. teach the additional limitations.

Demura et al. teach at least one substituted outer parity symbols (PO), (figure 7, col. 7, lines 37-53, Demura et al.) and at least one substituted inner parity symbol (PI), (figure 1, 3, 7, col. 1, lines 45-54, col. 4, lines 65-67, col. 7, lines 37-53, Demura et al.).

18. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mueller et al. (US 6,188,659 B1) in view of Masaki et al. (US 6,275,462 B1).

As per claim 12, Mueller et al. teach a method for validating a signature on a DVD (col. 1, lines 15-18, lines 46-53, Mueller et al.).

However Mueller et al. do not explicitly teach the specific use of comparing the number of reads for at least one unprocessed sector within the ECC block to be read correctly with the number of reads for at least one processed sector within said ECC block to be read correctly.

Masaki et al. in an analogous art teach that the write patterns written in the test writing sector of the medium in step S18 and the read pattern read out from the test writing sector in step S23 are compared on a bit unit basis, thereby calculating the number of times of dissidence (col. 21, lines 45-49, Masaki et al.). Masaki et al. also teach that as a reading process in this case, the reading process without an error correction of the ECC and CRC is performed (col. 21, lines 30-32, Masaki et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Mueller et al.'s patent with the teachings of Masaki et al. by including an additional step of comparing the number of reads for at least one unprocessed sector within the ECC block to be read correctly with the number of reads for at least one processed sector within said ECC block to be read correctly.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that comparing the number of reads for at least one unprocessed sector within the ECC block to be read correctly with the number of reads for

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at least one processed sector within said ECC block to be read correctly would provide the opportunity to determine if the DVD has a valid signature.

- As per claim 13, Mueller et al. and Masaki et al. teach the additional limitations.

Masaki et al. teach the method, wherein said comparing comprises: pre-determining a maximum allowable number of reads, reading the processed sector up to said maximum allowable number of reads or until successfully read; comparing the number of reads of at least one unprocessed sector with the number of reads to successfully read of said at least one processed sector, and if the number of reads for the processed sector is greater than the number of reads for an unprocessed sector, take the next step (col. 21, lines 45-49, Masaki et al.).

Mueller et al. teach that the signature is valid (col. 1, lines 15-18, lines 46-53, Mueller et al.).

- As per claim 14, Mueller et al. and Masaki et al. teach the additional limitations.

Mueller et al. teach a method for validating a signature on a DVD (col. 1, lines 15-18, lines 46-53, Mueller et al.).

Masaki et al. teach comparing the time to successfully read at least one unprocessed sector within the ECC block with the time to read at least one processed sector within said ECC block (col. 21, lines 45-49, Masaki et al.).

- As per claim 15, Mueller et al. and Masaki et al. teach the additional limitations.

Masaki et al. teach the method, wherein said comparing comprises: reading said at least one processed sector until said at least one processed sector is successfully read or the reading of said at least one processed sector is timed out; determining the time of reading said at least one processed sector; and comparing the time to read at least one unprocessed sector with the time to successfully read said at least one processed sector (col. 21, lines 45-49, Masaki et al.).

19. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. (US 6,289,102 B1) as applied to claim 16 above, and further in view of Tsumagari et al. (US 6,360,057 B1). As per claim 17, Ueda et al. substantially teach the claimed invention described in claim 16 (as rejected above).

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However Ueda et al. do not explicitly teach the specific use of the method, wherein altering at least one component comprises: changing the Burst Cutting Area (BCA) descriptor.

Tsumagari et al. in an analogous art teach a burst cutting area (BCA) descriptor. This BCA is applied as an option to a DVD-ROM disc alone, and is an area for storing recorded information upon completion of the disc manufacturing process (col. 9, lines 34-37, Tsumagari et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ueda et al.'s patent with the teachings of Tsumagari et al. by including an additional step of using the method, wherein altering at least one component comprises: changing the Burst Cutting Area (BCA) descriptor.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the method, wherein altering at least one component comprises: changing the Burst Cutting Area (BCA) descriptor would provide the opportunity to add a signature on a DVD for copy protection.

- As per claim 18, Ueda et al. and Tsumagari et al. teach the additional limitations.

Tsumagari et al. teach the method, wherein changing the BCA descriptor comprises: setting the BCA descriptor to 0x80 (col. 9, lines 34-37, Tsumagari et al.).

- As per claim 19, Ueda et al. and Tsumagari et al. teach the additional limitations.

Tsumagari et al. teach the method, wherein altering at least one component comprises: changing the Disc manufacturing information (DMI), (col. 8, line 63 to col. 9, line 2, Tsumagari et al.).

- As per claim 20, Ueda et al. and Tsumagari et al. teach the additional limitations.

Tsumagari et al. teach the method, wherein changing the DMI comprises: placing the DMI in one of a group of bytes including 0x01, 0x08, 0x10 and 0x80 (col. 8, line 63 to col. 9, line 2, Tsumagari et al.).

20. Claims 21, 25, 27, 31, 44, 61, 62, 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikinis (US 5,563,947) in view of Maeda et al. (US 6,072,759).

As per claim 21, Kikinis teaches a method for producing a signature on a disc comprising: altering at least one sector in the data zone of the disc so that said at least one sector is generally unreadable (col. 3, lines 45-49, Kikinis).

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However Kikinis does not explicitly teach the specific use of a digital optical disc (DVD).

Maeda et al. in an analogous art teach that DVD (Digital Video Disc/Digital Versatile Disc) is also developed as a multimedia disc, which deals with video data, audio data, computer data and so forth (col. 1, lines 25-28, Maeda et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kikinis' patent with the teachings of Maeda et al. by including an additional step of using a digital optical disc (DVD).

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using a digital optical disc (DVD) would provide the opportunity to use the disc as a multimedia disc, which stores video data, audio data and computer data.

- As per claim 25, Kikinis and Maeda et al. teach the additional limitations.

Maeda et al. teach computing the EDC (col. 7, lines 39-42, Maeda et al.).

Kikinis teach the method, wherein altering at least one sector comprises: altering at least one byte of the main data (col. 3, lines 45-48, Kikinis).

- As per claim 27, Kikinis and Maeda et al. teach the additional limitations.

Kikinis teaches a method for producing a signature on a disc comprising: appending or replacing at least one sector in the data zone of the disc: and amending said at least one sector in the data zone of the disc so that said at least one sector is generally unreadable (col. 3, lines 45-48, Kikinis).

Maeda et al. teach a digital optical disc (DVD), (col. 1, lines 25-28, Maeda et al.).

- As per claim 31, Kikinis and Maeda et al. teach the additional limitations.

Maeda et al. teach computing the EDC (col. 7, lines 39-42, Maeda et al.).

Kikinis teach the method, wherein altering at least one sector comprises: altering at least one byte of the main data (col. 3, lines 45-48, Kikinis).

- As per claim 44, Kikinis and Maeda et al. teach the additional limitations.

Maeda et al. teach a DVD encoder (figure 16B, col. 16, lines 15-16, lines 50-55, Maeda et al.).

Kikinis teach a non-standard sector generator (col. 3, lines 45-49, Kikinis).

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- As per claim 61, Kikinis and Maeda et al. teach the additional limitations.

Maeda et al. teach a DVD disc comprising: the lead-in zone of the DVD (figure 5A, 8A, col. 6, lines 46-47, 54-56, Maeda et al.).

Kikinis teach a signature having at least one altered component (col. 3, lines 45-48, Kikinis).

- As per claim 62, Kikinis and Maeda et al. teach the additional limitations.

Maeda et al. teach a DVD disc comprising: the data zone of the DVD (figure 6A, 7, col. 7, lines 36-37, Maeda et al.).

Kikinis teach at least one altered sector being generally unreadable (col. 3, lines 45-48, Kikinis).

- As per claim 63, Kikinis and Maeda et al. teach the additional limitations.

Maeda et al. teach a DVD disc (col. 1, lines 25-28, Maeda et al.).

Kikinis teaches at least one appended or replaced sector in the data zone of the disc; and at least one amended sector in the data zone of the disc, said at least one sector being generally unreadable (col. 3, lines 45-48, Kikinis).

21. Claims 22, 23, 24, 26, 28, 29, 30, 32, 45, 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kikinis (US 5,563,947) and Maeda et al. (US 6,072,759) as applied to claim 21 and 44 above, and further in view of Newman (US 6,353,890 B1).

As per claim 22, Kikinis and Maeda et al. substantially teach the claimed invention described in claim 21 (as rejected above). Kikinis teaches altering at least one sector (col. 3, lines 45-49, Kikinis).

However Kikinis and Maeda et al. do not explicitly teach the specific use of altering the contents of the sector header.

Newman in an analogous art teaches applying errors on a higher system level before the error encoding, e.g. by intentionally changing the EDC (error detection codes) in a sector or a sector header in CD-ROM (col. 5, lines 25-28, Newman).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kikinis' patent with the teachings of Newman by including an additional step of altering the contents of the sector header.

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This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that altering the contents of the sector header would provide the opportunity to add a signature on a DVD for copy protection.

- As per claim 23, Kikinis, Maeda et al. and Newman teach the additional limitations.

Maeda et al. teach ID (Identification Data), IED (ID Error Detection Code) (col. 7, lines 30-35, Maeda et al.) and CPR_MAI (Copyright Management Information), (figure 8C, col. 8, lines 60-64, col. 10, lines 39-43, Maeda et al.).

Newman teaches altering at least one sector (col. 5, lines 25-35, Newman).

- As per claim 24, Kikinis, Maeda et al. and Newman teach the additional limitations.

Newman teaches the method, wherein altering at least one sector comprises: altering the IED according to the ID; computing the EDC according the ID and the altered ID; and altering the computed EDC (col. 5, lines 25-35, Newman).

- As per claim 26, Kikinis, Maeda et al. and Newman teach the additional limitations.

Maeda et al. teach computing the EDC (col. 7, lines 39-42, Maeda et al.).

Newman teaches altering the computed EDC (col. 5, lines 25-28, Newman).

- As per claim 28, Kikinis, Maeda et al. and Newman teach the additional limitations.

Newman teaches the method, further comprising: altering the contents of the sector header in the appended or replaced at least one sector (col. 5, lines 25-28, Newman).

- As per claim 29, Kikinis, Maeda et al. and Newman teach the additional limitations.

Maeda et al. teach ID (Identification Data), IED (ID Error Detection Code) (col. 7, lines 30-35, Maeda et al.) and CPR_MAI (Copyright Management Information), (figure 8C, col. 8, lines 60-64, col. 10, lines 39-43, Maeda et al.).

Newman teaches altering at least one of a group including the ID (Identification Data), IED (ID Error Detection Code) and CPR_MAI (Copyright Management Information), (col. 5, lines 25-35, Newman).

- As per claim 30, Kikinis, Maeda et al. and Newman teach the additional limitations.

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Newman teaches the method, wherein altering at least one sector comprises: altering the IED according to the ID; computing the EDC according the ID and the altered ID; and altering the computed EDC (col. 5, lines 25-35, Newman).

- As per claim 32, Kikinis, Maeda et al. and Newman teach the additional limitations.

Maeda et al. teach computing the EDC (col. 7, lines 39-42, Maeda et al.).

Newman teaches altering the computed EDC (col. 5, lines 25-28, Newman).

- As per claim 45, Kikinis, Maeda et al. and Newman teach the additional limitations.

Maeda et al. teach a DVD encoder (figure 16B, col. 16, lines 15-16, lines 50-55, Maeda et al.).

Kikinis teach a non-standard sector generator (col. 3, lines 45-49, Kikinis).

Newman teaches at least one of a group including a sector header modifier, an EDC modifier (col. 5, lines 25-28, Newman).

- As per claim 46, Kikinis, Maeda et al. and Newman teach the additional limitations.

Maeda et al. teach a DVD encoder (figure 16B, col. 16, lines 15-16, lines 50-55, Maeda et al.) and ID (Identification Data), IED (ID Error Detection Code) (col. 7, lines 30-35, Maeda et al.) and CPR_MAI (Copyright Management Information), (figure 8C, col. 8, lines 60-64, col. 10, lines 39-43, Maeda et al.). Newman teaches the sector header modifier (col. 5, lines 25-28, Newman).

22. Claims 33, 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (US 6,539,475 B1) in view of Choo et al. (US 2002/0060874 A1).

As per claim 33, Cox et al. teach a method for producing a signature on a digital optical disc (DVD) (col. 1, lines 25-26, col. 5, lines 2-3, Cox et al.).

However Cox et al. do not explicitly teach the specific use of generating at least one sector, each of said at least one sectors requiring at least two read operations to be read correctly.

Choo et al. in an analogous art teach that in order to read sectors 0-9 correctly, it is assumed in this example that sector 3 requires three retries and sector 6 requires two retries (page 3, paragraph 48, Choo et al.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cox et al.'s patent with the teachings of Choo et al. by including an additional step of

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generating at least one sector, each of said at least one sectors requiring at least two read operations to be read correctly.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that generating at least one sector, each of said at least one sectors requiring at least two read operations to be read correctly would provide the opportunity to add a signature on a DVD for copy protection.

- As per claim 53, Cox et al. and Choo et al. teach the additional limitations.

Cox et al. teach a DVD disc (col. 1, lines 25-26, Cox et al.).

Choo et al. teach a disc comprising at least one sector, configured to require at least two read operations to be read correctly (page 3, paragraph 48, Choo et al.)

23. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (US 6,539,475 B1) and Choo et al. (US 2002/0060874 A1) as applied to claim 33 above, and further in view of Williams et al. (US 2001/0042230 A1) and Oshima et al. (US 6,266,299 B1).

As per claim 34, Cox et al. and Choo et al. substantially teach the claimed invention described in claim 33 (as rejected above).

Cox et al. also teach introducing at least one ambiguous symbol into a block (figure 1a, col. 2, lines 18-20, lines 52-55, col. 3, lines 12-15, Cox et al.).

However Cox et al. and Choo et al. do not explicitly teach the specific use of partially disabling error correction.

Williams et al. in an analogous art teach that the ECC Engine 213 previously disabled error correction in response to the command of the indicating operation 502 (block 502 in figure 5, page 4, paragraph 43, Williams et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cox et al.'s patent with the teachings of Williams et al. by including an additional step of partially disabling error correction.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that partially disabling error

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correction would provide the opportunity to increase the time to read the sectors on the DVD during the signature validation.

Cox et al. and Choo et al. also do not explicitly teach the specific use of EFM+ encoding and ECC.

Oshima et al. in an analogous art teach that since the control data is main information, it is recorded by EFM, 8-15, or 8-16 modulation (col. 31, lines 41-42, Oshima et al.). Oshima et al. also teach that FIG. 21 (a) is a diagram illustrating the data structure after ECC encoding ... present invention (figure 21a, 21b, 21c, col. 13, lines 60-65, Oshima et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cox et al.'s patent with the teachings of Oshima et al. by including an additional step of using EFM+ encoding and ECC.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using EFM+ encoding and ECC would provide the opportunity for uniquely describing any combination of eight real data bits by a pattern of 16 channel bits and error correction of data bits read from the disc.

24. Claims 35, 36, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (US 6,539,475 B1) and Choo et al. (US 2002/0060874 A1) as applied to claim 33 above, and further in view of Demura et al. (US 6,357,030 B1).

As per claim 35, Cox et al. and Choo et al. substantially teach the claimed invention described in claim 33 (as rejected above).

However Cox et al. and Choo et al. do not explicitly teach the specific use of selecting at least one byte in at least one column of the ECC block.

Demura et al. in an analogous art teach that a byte column (a column of 192 bytes formed by taking one byte from each of 192 rows) is read from the source data of the ECC block F1 (fig. 7, col. 5, lines 3-5, Demura et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cox et al.'s patent with the teachings of Demura et al. by including an additional step of selecting at least one byte in at least one column of the ECC block.

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This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that selecting at least one byte in at least one column of the ECC block would provide the opportunity to modify the data stored in the ECC block.

- As per claim 36, Cox et al., Choo et al. and Demura et al. teach the additional limitations.

Demura et al. teach encoding at least one data symbol in said column by the corresponding ambiguous representation of said at least one data symbol (figure 7, col. 5, lines 18-24, Demura et al.).

- As per claim 37, Cox et al., Choo et al. and Demura et al. teach the additional limitations.

Demura et al. teach the method, wherein partially disabling error correction comprises: invalidating at least one outer parity symbol (P0) of the 16 PO bytes corresponding to the at least one column; and invalidating at least one inner parity symbol (PI) of the 10 PI bytes corresponding to each row containing one of the invalidated outer parity symbols (figure 7, col. 7, lines 37-53, Demura et al.).

- As per claim 38, Cox et al., Choo et al. and Demura et al. teach the additional limitations.

Demura et al. teach the method, wherein invalidating comprises: invalidating the sequence of bits in said at least one outer parity symbol (PO) and said at least one inner parity symbol (PI), (figure 7, col. 3, lines 15-39, Demura et al.).

25. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. (US 6,072,759) in view of Williams et al. (US 2001/0042230 A1) and Cox et al. (US 6,539,475 B1).

As per claim 47, Maeda et al. teach a DVD encoder (figure 16B, col. 16, lines 15-16, lines 50-55, Maeda et al.).

However Maeda et al. do not explicitly teach the specific use of an error correction disabler.

Williams et al. in an analogous art teach that the ECC Engine 213 previously disabled error correction in response to the command of the indicating operation 502 (block 502 in figure 5, page 4, paragraph 43, Williams et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maeda et al.'s patent with the teachings of Williams et al. by including an additional step of using an error correction disabler.

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This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using an error correction disabler would provide the opportunity to increase the time to read the sectors on the DVD during the signature validation.

Maeda et al. also do not explicitly teach the specific use of an ambiguous symbol generator.

However Cox et al. in an analogous art teach that the trigger signal is embedded into the data in the manner of inserting a digital watermark into data to form watermarked data (figure 1a, col. 2, lines 18-20, Cox et al.). Another object of the invention is the provision of a trigger signal embedded into data to be protected so that upon detection of the trigger signal only authorized copies of data may be rendered useable (col. 2, lines 52-55, Cox et al.). Cox et al. also teach that in figure 1a ... given key (col. 3, lines 12-15, Cox et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maeda et al.'s patent with the teachings of Cox et al. by including an additional step of using an ambiguous symbol generator.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using an ambiguous symbol generator would provide the opportunity to insert a signature on a DVD disc to protect the data from unauthorized copying.

26. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. (US 6,072,759), Williams et al. (US 2001/0042230 A1) and Cox et al. (US 6,539,475 B1) as applied to claim 47 above, and further in view of Demura et al. (US 6,357,030 B1).

As per claim 48, Maeda et al., Williams et al. and Cox et al. substantially teach the claimed invention described in claim 47 (as rejected above).

However Maeda et al., Williams et al. and Cox et al. do not explicitly teach the specific use of an ECC block number selector; a row and column number selector; and an address comparator in communication with said ECC block number selector and said row and column number selector.

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Demura et al. in an analogous art teach that the ECC block F1 ... PO portion (figure 1, 7, col. 5, lines 1-17, Demura et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maeda et al.'s patent with the teachings of Demura et al. by including an additional step of using an ECC block number selector; a row and column number selector; and an address comparator in communication with said ECC block number selector and said row and column number selector.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that it would provide the opportunity to modify the selected row and column in the selected ECC block.

27. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. (US 6,072,759), Williams et al. (US 2001/0042230 A1) and Cox et al. (US 6,539,475 B1) as applied to claim 47 above, and further in view of Kim (US 6,694,023 B1).

As per claim 49, Maeda et al., Williams et al. and Cox et al. substantially teach the claimed invention described in claim 47 (as rejected above).

However Maeda et al., Williams et al. and Cox et al. do not explicitly teach the specific use of standard main conversion and substitution tables; at least one table of ambiguous symbols; and a selector in communication with said standard main conversion and substitution tables and said at least one table of ambiguous symbols, said selector determining which of said standard main conversion and substitution tables and said at least one table of ambiguous symbols to use for encoding at least one data symbol.

Kim in an analogous art teaches that the EFM+ table used in step 108 complies with specifications for a DVD-ROM and includes a main conversion table and a substitution table (col. 4, lines 4-6, Kim). Kim also teach that in order to vary a fundamental EFM+ table according to the specifications for a DVD-ROM within a range where an error does not occur in a DVD recording and/or reproducing apparatus, the embodiment of the present invention lets symbols corresponding to decimal numbers 0 through 255 in the above-described main conversion table shift by one place (col. 4, lines 31-37, Kim). Kim teaches that when a main conversion table is varied in the above manner, 255 varied EFM+ tables are obtained from the fundamental EFM+ table. In this embodiment, a symbol value in the main conversion table is used as

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a table number for each EFM+ table, in order to discriminate a total of 256 EFM+ tables, including a fundamental EFM+ table, from each other (col. 4, lines 51-57, Kim). Kim also teaches that the 256 EFM+ tables are stored in a storage (not shown) in a DVD recording and/or reproducing apparatus and selectively retrieved from the storage for EFM-modulating data to be recorded and/or reproduced (col. 5, lines 40-43, Kim).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maeda et al.'s patent with the teachings of Kim by including an additional step of using standard main conversion and substitution tables; at least one table of ambiguous symbols; and a selector in communication with said standard main conversion and substitution tables and said at least one table of ambiguous symbols, said selector determining which of said standard main conversion and substitution tables and said at least one table of ambiguous symbols to use for encoding at least one data symbol.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that it would provide the opportunity to insert a signature on a DVD disc to protect the data from unauthorized copying.

28. Claims 50, 51, 64, 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. (US 6,072,759) in view of Demura et al. (US 6,357,030 B1).

As per claim 50, Maeda et al. teach a DVD encoder (figure 16B, col. 16, lines 15-16, lines 50-55, Maeda et al.).

However Maeda et al. do not explicitly teach the specific use of an ECC block invalidator.

Demura et al. in an analogous art teach that the XOR computation ... in FIG. 7 (figure 7, col. 5, lines 18-24, Demura et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maeda et al.'s patent with the teachings of Demura et al. by including an additional step of using an ECC block invalidator.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using an ECC block invalidator

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would provide the opportunity to insert a signature on a DVD disc to protect the data from unauthorized copying.

- As per claim 51, Maeda et al. and Demura et al. teach the additional limitations.

Demura et al. teach an outer parity symbols (PO) invalidator; an inner parity symbols (PI) invalidator; and a data symbol replacer (figure 7, col. 7, lines 37-53, Demura et al.).

- As per claim 64, Maeda et al. and Demura et al. teach the additional limitations.

Maeda et al. teach a DVD encoder (figure 16B, col. 16, lines 15-16, lines 50-55, Maeda et al.).

Demura et al. teach means for invalidating an ECC block (figure 7, col. 5, lines 18-24, Demura et al.).

- As per claim 65, Maeda et al. and Demura et al. teach the additional limitations.

Demura et al. teach means for invalidating an outer parity symbols (PO); means for invalidating an inner parity symbols (PI); and means for replacing a data symbol (figure 7, col. 7, lines 37-53, Demura et al.).

29. Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maeda et al. (US 6,072,759) in view of Newman (US 6,353,890 B1).

As per claim 52, Maeda et al. teach a DVD encoder (figure 16B, col. 16, lines 15-16, lines 50-55, Maeda et al.).

However Maeda et al. do not explicitly teach the specific use of an invalid Reed-Solomon parity symbol generator.

Newman in an analogous art teaches that FIG. 3 shows an error correcting unit used in the CD system, called the CIRC (Cross Interleaved Reed-Solomon code), (col. 6, lines 55-57, Newman). Newman also teaches that applying errors on a higher system level before the error encoding, e.g. by intentionally changing the EDC (error detection codes) in a sector or a sector header in CD-ROM, may be easily mimicked by a malicious party, because the formatting process for higher levels is usually performed via software and therefore accessible for manipulation (col. 5, lines 25-31, Newman).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maeda et al.'s patent with the teachings of Newman by including an additional step of using an invalid Reed-Solomon parity symbol generator.

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This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that an invalid Reed-Solomon parity symbol generator would provide the opportunity to insert a signature on a DVD disc to protect the data from unauthorized copying.

30. Claims 58-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (US 6,539,475 B1), Williams et al. (US 2001/0042230 A1) and Oshima et al. (US 6,266,299 B1) as applied to claim 54 above, and further in view of Mueller et al. (US 6,188,659 B1) and Masaki et al. (US 6,275,462 B1).

As per claim 58, Cox et al., Williams et al. and Oshima et al. substantially teach the claimed invention described in claim 54 (as rejected above).

However Cox et al., Williams et al. and Oshima et al. do not explicitly teach the specific use of the DVD disc, wherein said signature is validatable.

Mueller et al. in an analogous art teach a method of insuring the uniqueness of an originally recorded CD, but may also be applied to DVD-R, DVD-RAM as well as stamped CD and DVD. (col. 1, lines 15-18, Mueller et al.). Mueller also teach that to verify that the CD ... an illegal copy (col. 1, lines 46-53, Mueller et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cox et al.'s patent with the teachings of Mueller et al. by including an additional step of using the DVD disc, wherein said signature is validatable.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the DVD disc, wherein said signature is validatable would provide the opportunity to provide protection against illegal copy of DVD discs.

Cox et al., Williams et al. and Oshima et al. also do not explicitly teach the specific use of requiring a greater number of reads for a processed sector on the disc than the number of reads for an unprocessed sector.

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However Masaki et al. in an analogous art teach that the write patterns written in the test writing sector of the medium in step S18 and the read pattern read out from the test writing sector in step S23 are compared on a bit unit basis, thereby calculating the number of times of dissidence (col. 21, lines 45-49, Masaki et al.). Masaki et al. also teach that as a reading process in this case, the reading process without an error correction of the ECC and CRC is performed (col. 21, lines 30-32, Masaki et al.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Cox et al.'s patent with the teachings of Masaki et al. by including an additional step of requiring a greater number of reads for a processed sector on the disc than the number of reads for an unprocessed sector.

This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that requiring a greater number of reads for a processed sector on the disc than the number of reads for an unprocessed sector would provide the opportunity to determine if the DVD has a valid signature.

- As per claim 59, Cox et al., Williams et al., Oshima et al., Mueller et al. and Masaki et al. teach the additional limitations.

Mueller et al. teach the DVD disc, wherein said signature is validatable (col. 1, lines 15-18, lines 46-53, Mueller et al.).

Masaki et al. teach requiring a pre-determined time to be read (col. 21, lines 45-49, Masaki et al.).

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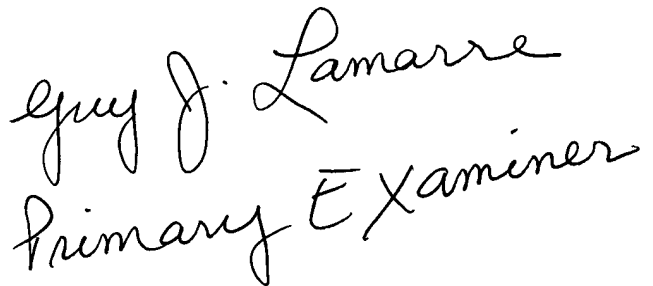
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dipakkumar Gandhi whose telephone number is 571-272-3822. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Dipakkumar Gandhi
Patent Examiner



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Primary Examiner